Touch Screen UPS

10-60KVA

USER MANUAL

INDEX

1．Brief Introduction:

890 (3 phase in and 3phase out) series is large power and true on－line UPS ranges from 10KVA to 60KVA, which adopts advanced digital design, high speed 16－bit chip, ASIC, DDC and large power IGBT&SCR, showing large capacity, high stability and super performance compared with normal models on the market. All the products have integrated the latest hardware and powerful software in itself, which could provide optimum pure power to integrated server center. This system supports several units connected in parallel through unique control technology.

The liquid crystal touch-sensitive display screen adopts nowadays the most popular, ocular figure operate interfaces. Compared with normal LCD display module, the touch screen display module does not have complicated operating procedure, users can directly press the simulation button on the display and obtain the corresponding information, easy and understandable; Meanwhile it has real-time clock and memory function, which can record 256 pieces of incident record and other setting messages.

2．Operation Requirement:

➢ Please read carefully the user manual before using the machine.
➢ This manual must be understood and conserved by professional.。
➢ This manual does not explain the specific technology.
➢ This manual only suits 890 (3 phase in and 3phase out) series UPS.

The user manual shall be the reference while using and the guide book while encounters alarm and other important working states.

3．Notices:

3.1 Make sure relevant power input/output/battery/cable.

3.2. Must have steady grounding system.

3.3. There are a lot of high-voltage energy storage device in machine, please don't open and check without guidance, we are not responsible for people safety arouse because of this. The operator must obtain the basic electrician knowledge and understand the operation instructions.

3.4. Without permission, connection cables are not allowed to dismantle.

3.5. Since the machine is big and heavy, it shall not be moved, split or shake strongly at will, and please keep the ventilating well.

3.6. With power connected, do not try to discharge dust; do not use wet towel to wipe the dirt.

3.7. The battery must be changed by the professional and technical personnel; the changed battery shall be delivered to special circulation organization. The battery is "poisonous waste material"

3.8. When UPS is not used for a long time after installed, the disposed battery will discharge automatically; meanwhile chemical energy of the battery will be automatically consumed. According to the environmental climate, the battery shall be charged in every three months at the degree of 25, if the temperature is more than 30 degrees, the battery should be charged every two months. Only need to start UPS while charging, and run at least for 24 hours under the normal work mode.
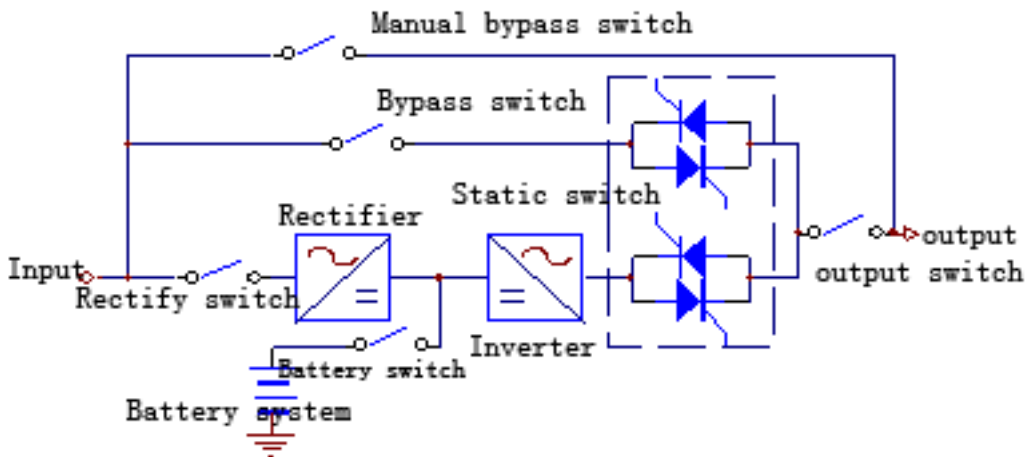
4. Working principle:

4.1 This 890 series UPS has highly combined digital technology, improved MTBF and stability. The

whole system is controlled by an independent main control board, which adopts microprocessor control to ensure stability and reliability.
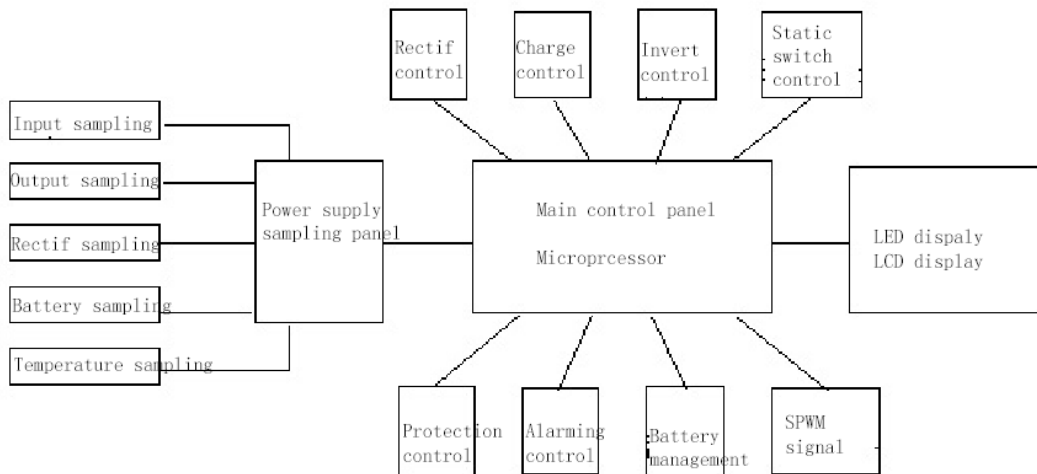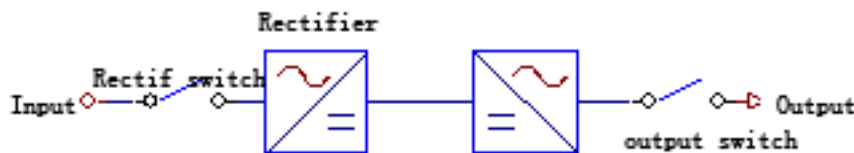

In addition to the above figure, the others parts of the UPS includes: invert transformer, input inductance, IGBT, SCR and switch.

4.2. Standard UPS principle:

4.3. Mains inverting principle:

After AC input turn to DC filter through rectifier, then inverter invert through SPWM and supply output AC power.

4.3.1.Normal inverter model：

Battery has been fully charged, after AC rectifier, then inverter output.
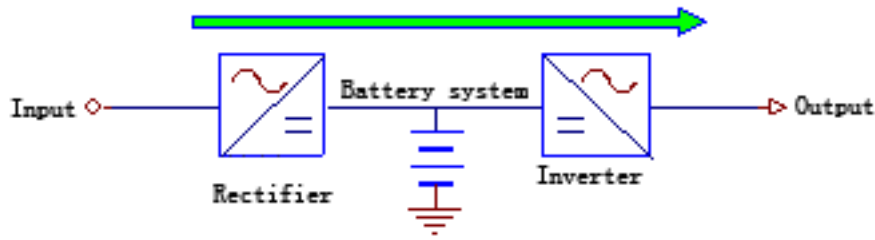
4.3.2. Inverting normally, and battery charge working model：
Battery voltage is low, after AC inverter; on one hand it will charge the battery, on the other invert to output.
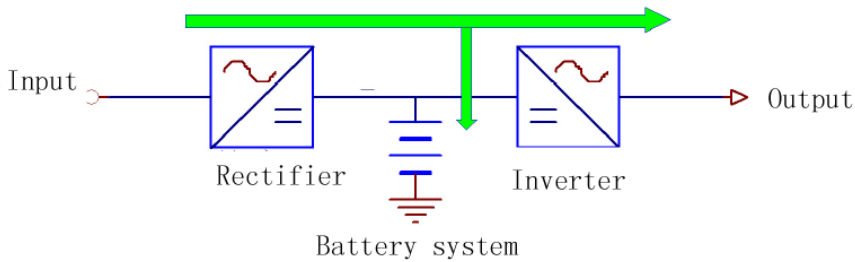
4.3.3. AC input failure, battery-working model:
AC input is failure, battery invert and supply power.
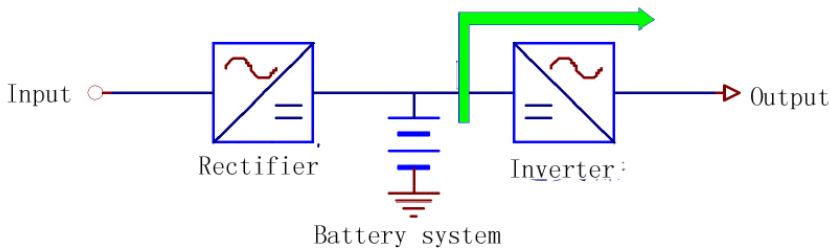
4.3.4. Bypass output working model:
There is AC input, but inverter has been closed, meantime, output is supplied with bypass.
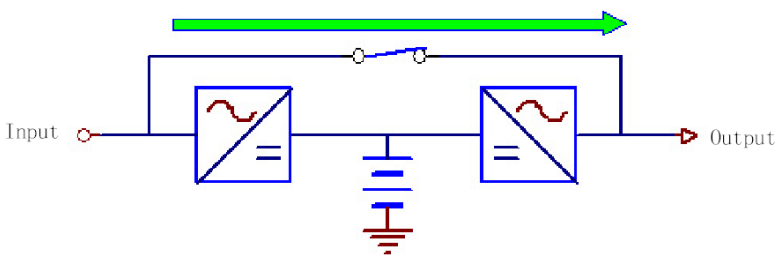
4.4. Function module components
4.4.1. Rectifier
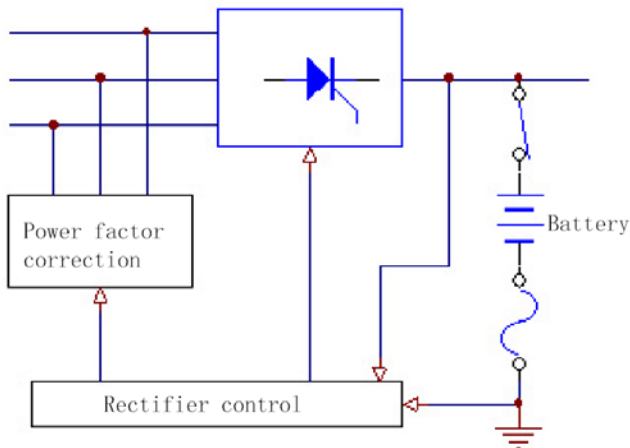
- ➢ Protection short circuit rectifier switch
- ➢ Lightning arrestor
- ➢ 6pulse rectifier
- ➢ Input inductance
- ➢ Battery temperature compensation
- ➢ Battery float charging
- ➢ Battery timing balanced charging.
- ➢ The output of rectifier can be limited in a certain value, at the same time charge the battery with constant current, constant voltage; expert engineer can adjust the parameter to change the rectifier work.

4.4.2. Inverter
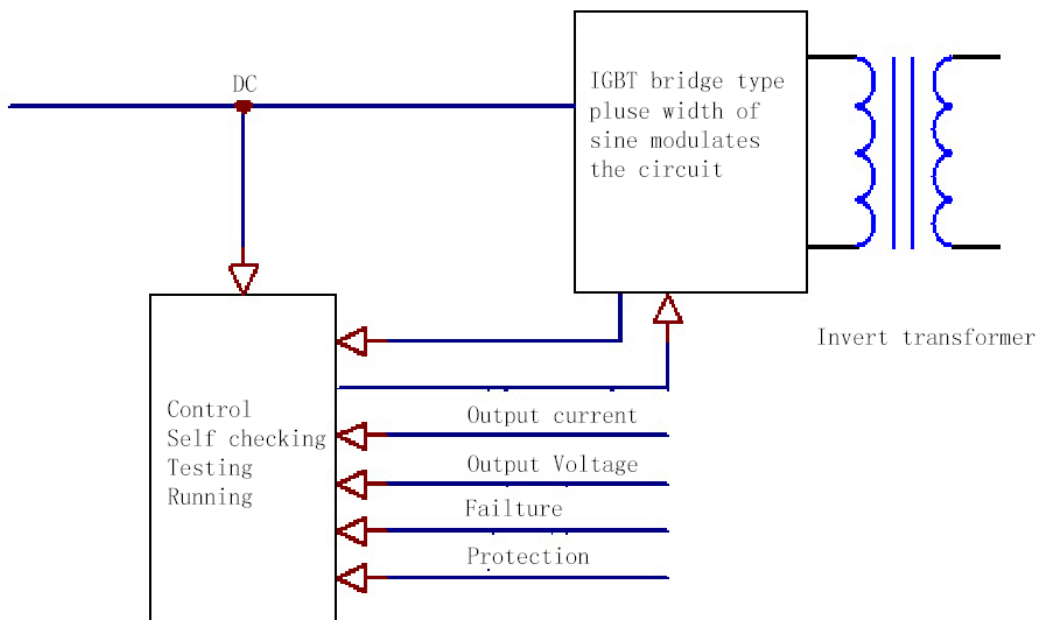
- ➢ Inverting output isolation transformer.
- ➢ 3 Phase PWM inverting bridge.
- ➢ Current sampling
- ➢ Voltage sampling
- ➢ Feedback control
- ➢ Self–testing
- ➢ Hardware testing
- ➢ Circuit Protection

5．Front panel introduction：
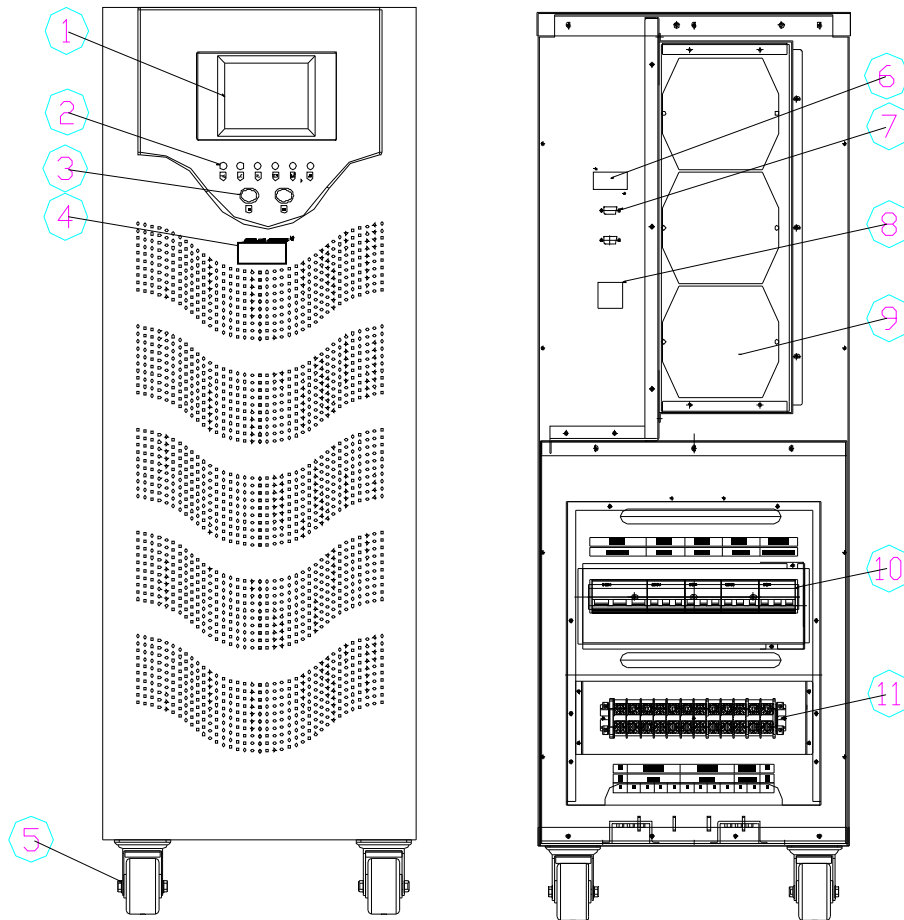
1. LCD display------display various data
2. LED statue indicator-----indicate working statue
3. Button F1, F2
4. LOGO
5. Wheel
6. SNMP (option)
7. RS232 communication port.
8. Service AC source
9. Fan
10. Input rectifier switch ------Control rectifier input
    Bypass switch ------Control bypass input.
    Output switch ------Control output
    Battery switch ------Control battery input
    Maintenance bypass switch ------Control AC bypass (just use it when maintenance)
11. Line bank------Connect input, output, battery and grounding.

6. INSTALLATION:

6.1.Installation environment：
➢ Temperature：0℃~+40℃
➢ Relative humidity：30%~90%
➢ Altitude：≤1000M
➢ Installation environment dimension（W×D×H）：
 2000×2000×2000
➢ Floor pressure requirement：2000KG/M^2

The indoor environment requirement is as following:
➢ No dust
➢ Appropriate indoor temperature: please operate UPS in 0~40℃,
But it is 0℃when start, the idea operation temperature is 25℃.
➢ There should be a good cooling system, the following is a feasible method:
 A: Natural ventilation system: Only suitable for low heat and vast space.
 B: Artificial ventilation system: Need to install the air conditioner when enclosure temperature (TE) exceeds peripheral temperature (TE). When TE and TA are close, the capacity of the heat distribution system will increase.

6.2. Check before installation：
➢ Unpack the equipment and inspect again to determine if any external or internal damage has occurred.
➢ Open the main entrance; meanwhile please check if all switches are disconnected.
➢ Warranty card, Operation manual, and pacing list should be in the package

6.3.Installation Site：

➢ There should be at least 80cm space between machine back and the wall and any other things.
➢ Do not lay goods on the UPS.
➢ It must have enough room to Overhaul in the front of equipment and above.
➢ Battery box of equipment must keep enough position on right-hand side for battery overhaul.
➢ Power line must be connected from button of machine.

6.4. Terminal connection diagram:

E	R	S	T	N	N	R	S	T	+	-	E
		Input				Output			Battery		
					Grounding						
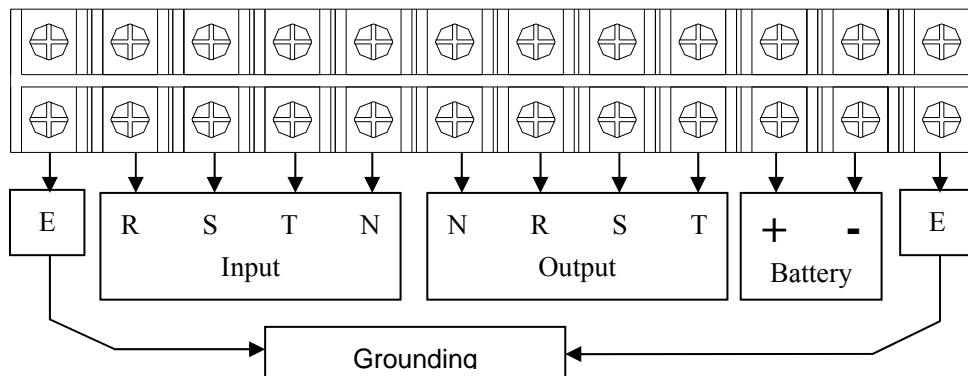
Before install the UPS, please disconnect all switches.
Left: R、S、T、N connect three phase input phase line and median line ;
Right :N 、R 、S、T connect three phase output phase line and median line;
E connect earth line；+、- connect battery positive pole and negative pole.

6.5. UPS three output system 10-60KVA cable specification: (unit: mm2)

capacity	Input (380V/400V/415V)					Output(380V/400V/415V)				Battery	
	R	S	T	N	E	R	S	T	N	+	-
10KVA	6	6	6	6	6	6	6	6	6	10	10
15KVA	10	10	10	10	10	10	10	10	10	16	16
20KVA	10	10	10	10	10	10	10	10	10	16	16
30KVA	16	16	16	16	16	16	16	16	16	25	25
40KVA	16	16	16	16	16	16	16	16	16	25	25
50KVA	25	25	25	25	25	25	25	25	25	35	35
60KVA	25	25	25	25	25	25	25	25	25	50	50
capacity	Input (200V208V/220V)					Output (200V208V/220V)				Battery	
	R	S	T	N	E	R	S	T	N	+	-
10KVA	10	10	10	10	10	10	10	10	10	16	16
15KVA	10	10	10	10	10	10	10	10	10	16	16
20KVA	16	16	16	16	16	16	16	16	16	16	16
30KVA	16	16	16	16	16	16	16	16	16	25	25
40KVA	25	25	25	25	25	25	25	25	25	35	35
50KVA	35	35	35	35	35	35	35	35	35	35	35
60KVA	50	50	50	50	50	50	50	50	50	50	50

6.6．Battery connection
- Open battery pack.
- Install battery on the corresponding position and connecting the good battery connecting wire

6.7. Wiring inspection

connect all input/output/battery/wire，check the followings:
- If   the battery wiring are all connected correctly and being in good contact
- Input, output, the earth connection has already been connected in the corresponding wiring on the equipment is arranged correctly,
- The voltage of input end, frequency, and phase should keep the same with voltage of bypass, frequency, and phase.

7. Specification：

7.1 UPS series specification

Model	10KVA	15KVA	20KVA	30KVA	40KVA	50KVA	60KVA
Capacity （KVA）	10	15	20	30	40	50	60
INPUT							
Input single current (A)	12A	18A	24A	36A	48A	60A	72A
Working way and principle	On line，static bypass switch (zero transfer time), Double switch technology, output power to totally isolate						
Phase	3phase +N+G						
Nominal voltage	380/400/415VAC±25%						

Nominal frequency	50Hz±10%，60Hz±10%						
Voltage harmonics distortion	＜10%						
Soft start	0～100% 5sec						
Rectifier Output							
Max. output voltage	405VDC						
Microcomputer setting charge current	1A～30A（depend on battery capacity）						
Battery							
Battery quantity	30pcs						
Nominal battery voltage	360VDC						
Floating voltage	405VDC						
Charge current	1A～30A（depend on battery capacity）						
Inverter							
Rated power （KW） COSφ=0.8	8	12	16	24	32	40	48
Phase	3phase +N+G						
Nominal voltage	380/400/415VAC±2%（steady load），380/400/415VAC±5%（load fluctuate）						
Nominal frequency	50Hz±0.05%，60Hz±0.05%（battery supply power）						
Frequency stability： Out sync	＜±0.05%						
Frequency stability： Synchronization	＜±2%						
Crest factor	3：1						
Output wave	Sine wave						
Total harmonic distortion	Linearity load ＜3%；non-linearity load＜5%						
Dynamic load voltage transient	＜±5%						
Moment restart time	＜10ms						
Balance load voltage	＜±1%；＜±5%（imbalance load voltage）						
Overload capability	125% 1min，150% 1S						
Inverter efficiency， load 100%	91	91	92	92	93	93	93
Bypass							
Phase	3phase +N+G						
Nominal voltage	380/400/415VAC±25%						

Nominal frequency	50Hz±5%，60Hz±5%						
Inverter /bypass（transfer time）	（overload）0ms						
System							
Efficiency load 100%	＞90%						
PC communication interface	RS232						
Working temperature	0～40℃						
Humidity（non~condensing）	30%～90%						
Working height（Max.）	＜1000m（per100m, power decline 1%，Max.4000m）						
Type of cooling	Forced draught						
Noise dB（according to load and temperature）far away machine 1M	40～50				45～55	55～65	
Case color	Black						
Input cable	The bottom / back						
Easy maintenance	The front / the above / left and right						
Dimension W×D×H（mm）	450×730×1140			450×850×1240		710×850×1500	
Weight（kg）	232	248	300	380	480	580	650
Input device	Terminal						
Output device	Terminal						

Model	10KVA	15KVA	20KVA	30KVA	40KVA	50KVA	60KVA
Capacity （KVA）	10	15	20	30	40	50	60
INPUT							
Input single current (A)	12A	18A	24A	36A	48A	60A	72A
Working way and principle	On line，static bypass switch (zero transfer time), Double switch technology, output power to totally isolate						
Phase	3phase +N+G						
Nominal voltage	200/208/220VAC±25%						
Nominal frequency	50Hz±10%，60Hz±10%						
Voltage harmonics distortion	＜10%						
Soft start	0～100% 5sec						

Rectifier Output							
Max. output voltage	220VDC					405VDC	
Microcomputer setting charge current	1A～30A（depend on battery capacity）						
Battery							
Battery quantity	30pcs						
Nominal battery voltage	192VDC					360VDC	
Floating voltage	220VDC					405VDC	
Charge current	1A～30A（depend on battery capacity）						
Inverter							
Rated power （KW） COSφ=0.8	8	12	16	24	32	40	48
Phase	3phase +N+G						
Nominal voltage	200/208/220VAC±2%（steady load），200/208/220VAC±5%（load fluctuate）						
Nominal frequency	50Hz±0.05%，60Hz±0.05%（battery supply power）						
Frequency stability：Out sync	＜±0.05%						
Frequency stability：Synchronization	＜±2%						
Crest factor	3：1						
Output wave	Sine wave						
Total harmonic distortion	Linearity load ＜3%；non-linearity load＜5%						
Dynamic load voltage transient	＜±5%						
Moment restart time	＜10ms						
Balance load voltage	＜±1%；＜±5%（imbalance load voltage）						
Overload capability	125% 1min，150% 1S						
Inverter efficiency，load 100%	91	91	92	92	93	93	93
Bypass							
Phase	3phase +N+G						
Nominal voltage	200/208/220VAC±25%						
Nominal frequency	50Hz±5%，60Hz±5%						
Inverter /bypass （transfer time）	（overload）0ms						
System							
Efficiency load 100%	＞90%						

PC communication interface	RS232					
Working temperature	0～40℃					
Humidity （non~condensing）	30%～90%					
Working height （Max.）	＜1000m（per100m, power decline 1%，Max.4000m）					
Type of cooling	Forced draught					
Noise dB（according to load and temperature）far away machine 1M	40～50			45～55		55～65
Case color	Black					
Input cable	The bottom / back					
Easy maintenance	The front / the above / left and right					
Dimension W×D×H（mm）	450×730×1140			450×850×1240		710×850×1500
Weight（kg）	210	258	300	380	480	580	650
Input device	Terminal					
Output device	Terminal					

8. Alarm function:

8.1 Alarm 1：Bypass voltage failure or bypass fuse SCR failure.
It will alarm under these conditions:
1. Bypass input voltage is wrong.
2. Bypass input switch is cut off.
3. Bypass SCR fuse is cut off or burned because of output short circuit or fuse cut off.

8.2 Alarm 2：Main input power failure or rectifier input switch is cut off.
It will alarm under these conditions:
1. Input voltage is not in the range（165～275）/（90～150）V_{AC}.
2. Input frequency is not in the range（47.5～52.5）/（57～63）Hz.
2. Rectifier input switch cut off.
3. If one phase of the three phase rectifier are unable to work normally caused by the UPS abnormal, please refer to the content table to find the fault solution.

8.3Alarm 3：Battery low voltage
It will alarm under these conditions：
1. Battery voltage is too low.
2. The battery running time is shorter than previous setting time.

8.4 Alarm4：Battery discharge
When battery discharge, it will alarm at once, after around 2 minutes, alarm will stop. When battery discharges to the battery critical termination voltage, it will alarm again.

8.5 Alarm 5：Output overload.

Load power is bigger than rated output voltage, namely, the percentage value is more than 100 %，if load current is too big, UPS will alarm. When UPS alarm, it needs to reduce load capacity. Or UPS will turn to bypass automatically, the time period is calculated according to over load total value's inverse ratio.

8.6 Alarm6：Temporality bypass working

Means the bypass supply power to the load; UPS will automatically change into normal running statue (inverter supply power). There are some conditions under this temporality statue, for example, overload, after bypass supply power, UPS is waiting for power supplied by inverter.

8.7 Alarm 7：Bypass output overload

If overload time is too long, for example, overloading 125%, inverter can supply power 1min. then turn to bypass. UPS will renew normal running statue.

8.8 Alarm 8：High temperature or fan failure

When control system of UPS, inverter power module or rectifier power module is over temperature because of high temperature or fan failure, UPS turn to bypass.

9．UPS start up process：

It must be operated to obey this sequence; though there is battery switch in UPS.

Start up UPS：

9.1.Close input rectifier switch（Up）.

9.2. Close bypass switch（UP）

9.3. After battery low voltage indicator crush out, then close battery switch. When there is no any alarm statue indicator, bypass will turn to inverter statue.

Notice：It will display alarming information about the wrong phase sequence if rectifier switch is not turned on, at this time, please press F1 to release the alarm and conduct the above UPS start up process.

10．UPS maintenance shut down process:

10.1. Press F1&F2 to switch off Inverter, Let UPS go to bypass mode.

10.2. Close maintenance switch（up）

10.3. Open battery switch（down）

10.4. Open rectifier switch（down）

10.4. Open bypass switch（down）

10.6. Open UPS output switch（down）

11. Emergency shut down process：

This can be done when it appears fire, electric shock, electric arc or other danger. But it may cause the danger that no AC output.

——Make all switches cut off

12．Touch screen Introductions：

The liquid crystal touch-sensitive display screen adopts nowadays the most popular, ocular figure

operate interfaces. Compared with normal LCD display module, the touch screen display module does not have complicated operating procedure, users directly press the simulation button on the display and can obtain the corresponding information, easy and understandable; Meanwhile it has real-time clock and memory by oneself, which can record 256 pieces of incident record and other setting messages.

13．Operating interface introductions:

13.1 Standby pictures

It shows the standby picture when UPS is turned on. When the interval of the touch-sensitive screen is not touched for four minutes , CPU will cut off the power in a poor light of touch-sensitive screen automatically , this way can lengthen in a poor light service life , and come back watchful waiting picture (if UPS is under warning state to get back to at the same time, the touch-sensitive screen will have priority to show the warning information frame , CPU can not cut off touch-sensitive screen in a poor light power before canceling warning information).

13.2 The flow chart display interface

When the touch screen is under standby picture, you can touch it anywhere and enter into the flow chart display interface. You can see the basic information and working statue about this UPS. The meaning of each part in the picture is as follows:

Mains：Press it; you can look at the Mains input statue and data display.

UPS basic information：Display UPS basic information, include manufacturer. UPS model and version number.

Fine dotted line: It shows with detailed dotted line that the module has stopped to work.

Heavy line：It shows with detailed dotted line that the module is working.

Output：Press it; you can look at the UPS output statue and data display.

Inverter：Press it; you can look at inerter working statue and data display.

Systematic parameter setting module: It can set up time and langue.

UPS serial No.：it displays UPS products serial number.

Battery：Press it; you can look at battery working statue and data display.

System time： It can display time.

Slave marks：It shows this UPS is working when it is parallel connection.

Systems manage module：It can control UPS and consult the system records.

Rectifier ：Press it; you can look at the rectifier working statue and data display.
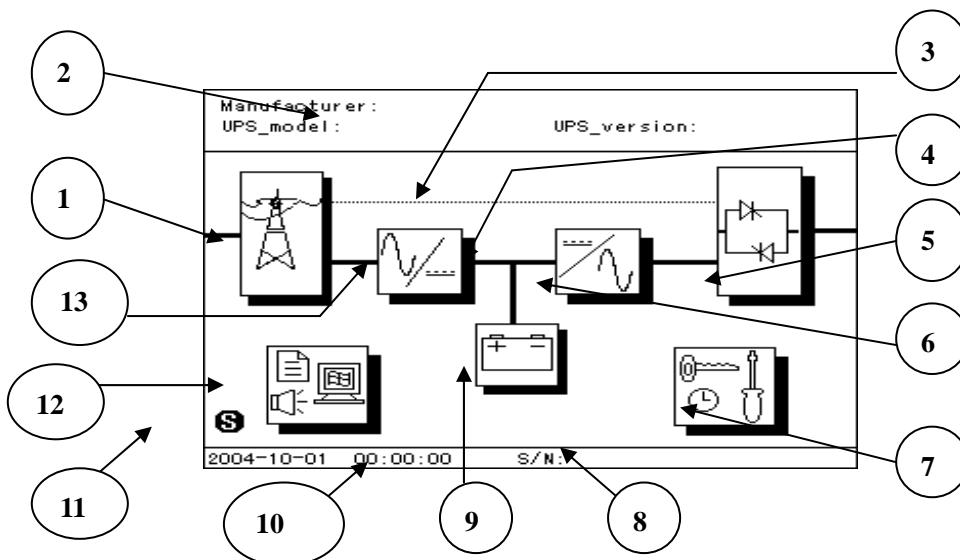
Picture 2

13.3 Measure data display interface.

Press Mains button, output button, inverter button, battery button and rectifier button, then enter into corresponding measure data display interface, please consult the picture 2 and it show the output information and data display. The meaning of each part in the picture is as follows:

（1）Form subject

（2）Form contents：All kinds of statue and data display

（3）System time：System time display

（4）Back space：Press button this return to the catalogue at a higher level

（5）ESC: Press this button and withdraw from all catalogues and get back to watchful waiting picture.

| UPS AC output check and measure			
AC output voltage （V）	220	220	220
AC output frequency （Hz）	50.0	50.0	50.0
AC output current （A）	00.0	00.0	00.0
Load capacity （%）	000	000	000
Bypass switch working statue	ON		
Inverter switch working statue	OFF		
2004-10-01 00:00:00			

Picture 3

13.4 Display panel introduction

15
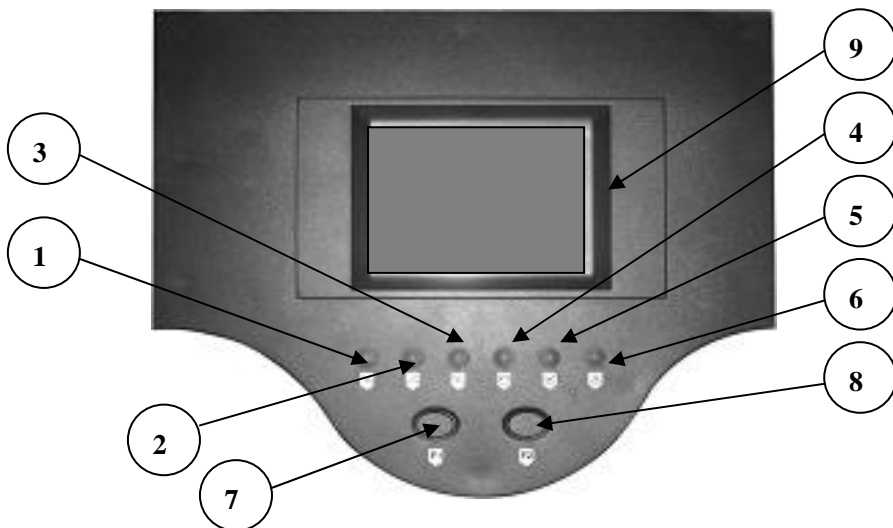
13.5 LED and press button introduction:
（1） Mains input indicator
（2） Bypass indicator
（3） Inverter indicator
（4） Battery low voltage indicator
（5） Overload indicator
（6） system failure indicator
（7） F1: Combined button /silencing button
（8）F2: turn on, Press F1 and F2 at the same time and turn off UPS，Long Press F1 and enter into set up model .

13.6 Management interface introduction
Press system manage module when the flow chart interface display image, touch system management module button to enter management display interface and press corresponding button. The meaning of each part in the picture is as follow:
⑴ON/OFF：When UPS is closed，the key display 'ON'，Press this button and start UPS；when UPS is started，the key display 'OFF'，press this button and close the UPS（system will demand to import password in order to avoid mistake ）.
⑵Battery measure operating button：When UPS is working, press this and enter into battery measure model.（system will demand to import password in order to avoid mistake）
⑶About：Press this button to check the touch screen version number information.
⑷Silencing：Make the buzzer silence.（system will demand to import password）
⑸UPS current working statue.
⑹ESC Button：Press this button and withdraw from all catalogues and get back to watchful waiting picture.
⑺Back Button：Press to return to the catalogue at a higher level
⑻Help：Press this button and consult help information.
⑼System information：Press this button and consult UPS's information.
⑽System record：Press this button and consult all history records.
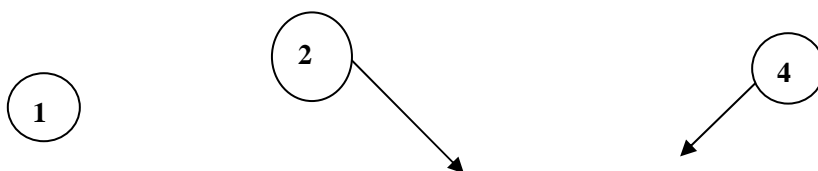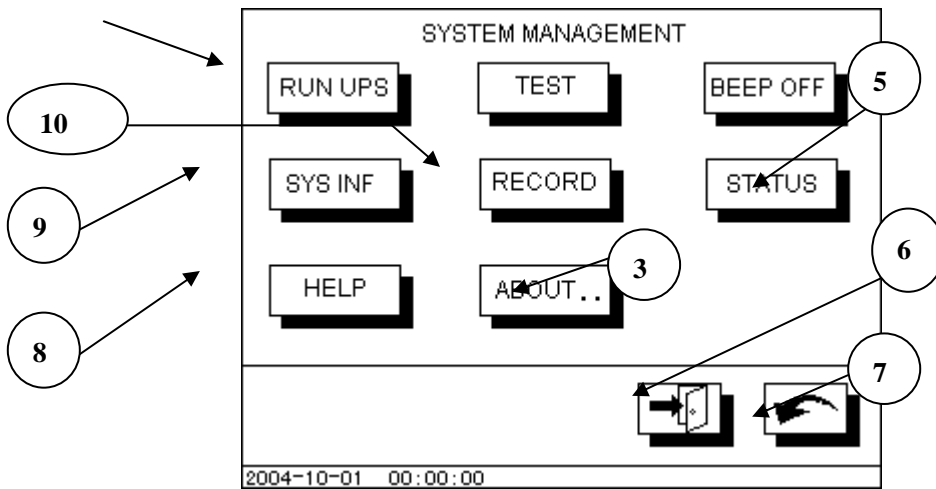
Picture 4

13.6.1 Password Enter Interface

Some operation will change the present working state of UPS, for instance: ON / OFF system, at this moment system will require operator enter operating password, otherwise reject. The initial operation password when the system is dispatched from the factory is 1234.please look at the picture 5. The meaning of each part in the picture is as follow:
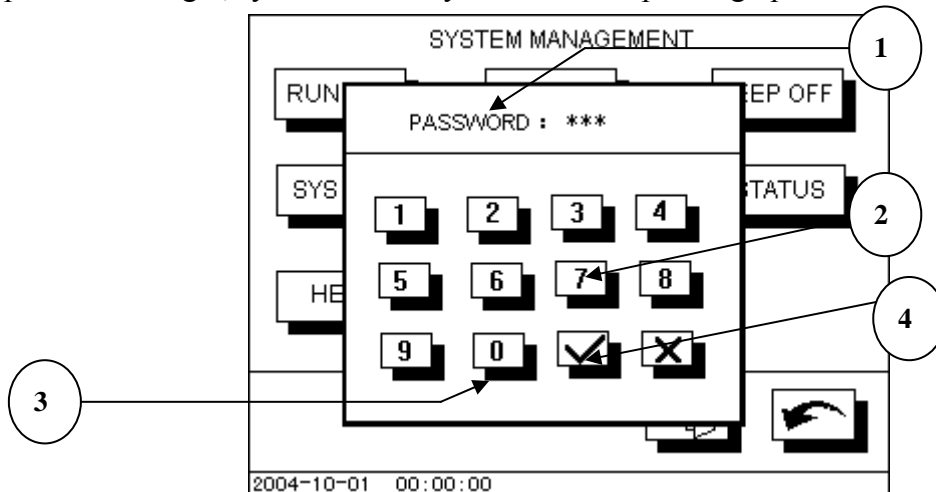
　　Password：It display password number, user input the password, then the number will interest of'
　　* '.

(2)Number button：Input corresponding number.

(3)Enter：After (2), press this button and enter into interface.

(4)ESC：Withdraw from the introduction password communication frame

　When the password is right, system will carry out the corresponding operation.

Picture 5

13.6.2 History records interface

Press system history records button when the manage interface display, and then enter into history records interface and press corresponding button. The meaning of each part in the picture is as follow:

　（1）The permutation order in the memory of the incident, the newest incident is arranged foremost, the serial number is minimum　(2)Incident code(3)Incident time：Time records when it has happened. （4)incident description ：It describes the incident type.(5)UP：Consult above 8 pieces incident

records. (6)Down： Consult above 8 pieces incident records.(7)ESC：Press this button and withdraw from all catalogues and get back to watchful waiting picture. (8)Back space： Press this button and consult all history records.

Incident record			
No.	Code	Time	Incident
000	044	2004-10-01 00：00：03	Silencing alarming
001	002	2004-10-01 00：00：00	Battery low voltage
002	001	2004-10-01 00：00：00	Input unusual
003	031	2004-09-30 00：00：00	Transmit the trouble
004	000	2000-00-00 00：00：00	No
		2004-10-01 00：00：00	

Picture 6

13.6.3 Current UPS working statue interface

Press current working statue button when the manage interface display, and then enter into current UPS working statue interface and press corresponding button. The meaning of each part in the picture is as follow:

(1)it shows current UPS working statue.

(2)ESC：Press this button and withdraw from all catalogues and get back to watchful waiting picture.

(3)Back Button： Press this button and consult all history records.

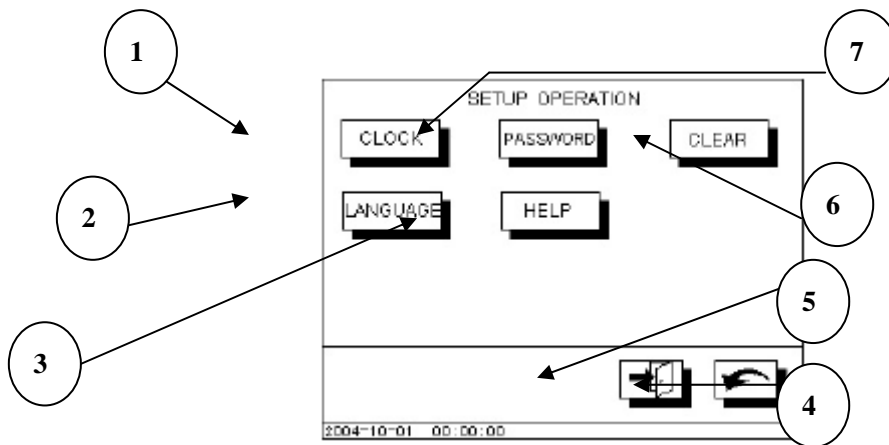| UPS current working statue |
|---|
| UPS has been shut down, battery low voltage, input unusual, bypass |
| Output |
| |
| |
| |
| |
| |
| 2004-10-01   00:00:00 |

Picture 7

13.7 Setup display interfaces

The setup display interface is like Picture 8 shows. Click with hand systematic parameter establish module button can be entered and set up the picture of showing at flow chart picture of showing. Then press the corresponding button and can alter the systematic parameter of UPS in this picture. The meaning of each part in the picture is as follow:

(1)Time setup button：It can change system time.（system will demand to import password in order to avoid mistake）

(2)langue setup button： You can choose one langue, ENGLISH /CHINESE.

(3)Help：Press this button and ask for some help.

(4)Back space： Press this button and consult all history records.

(5)ESC：Press this button and withdraw from all catalogues and get back to watchful waiting picture.

(6)Cancel button：Cancel all history records.（system will demand to import password in order to avoid mistake）

(7)Revise the password: Revise the systematic operation password. In order to prevent operating by mistake, the system will require the old operation password of introduction. Require introduction twice while inputting the new password, if the new password input twice is unanimous, the new password is set up and finished.
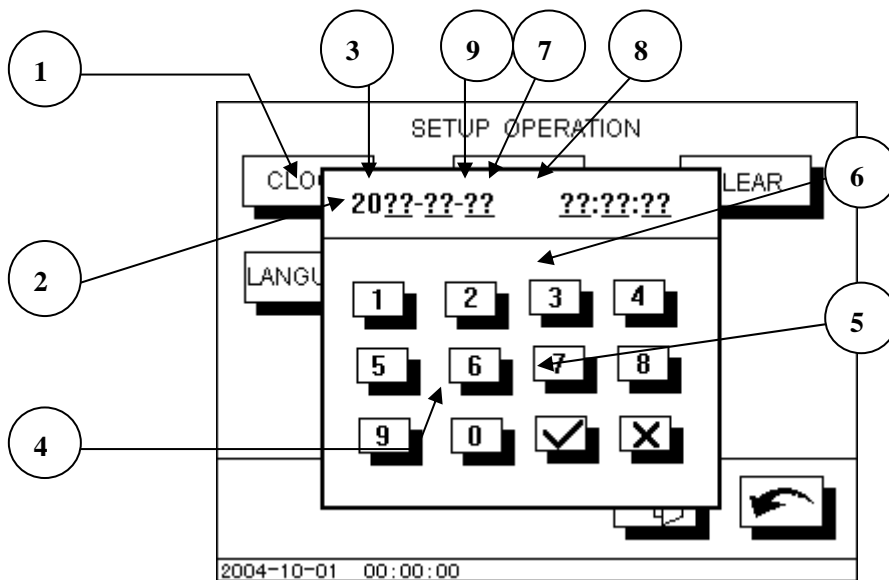
Picture 8

13.7.1 Password Enter interface

Some operation will change the present working state of UPS, for instance: change system time, at this moment system will require operator enter operating password, otherwise not carrying out. The initial operation password when the system is dispatched from the factory is 1234. Please consult the 13.6.1 about the operation.

13.7.2Time setup interface

Press time setup button and input right password when the setup interface display, then enter into the time setup interface. This interface is mainly for inputting the new systematic clock; the interface is as picture 9. Shows. The meaning of each part in the picture is as follow:

(1)Year： Show in year inputting the new clock. Before there is no new figure and use '? 'Express; when users import new number value from the figure button, show the digital value that users input.

(2)Month：Show in month inputting the new clock. Before there is no new figure and use '? 'Express; when users import new number value from the figure button, show the digital value that users input..

(3)Date：Show in date inputting the new clock. Before there is no new figure and use '? ' express; When users import new number value from the figure button , show the digital value that users input.

（4）Confirm：After finished entering, press this button.

（5）Cancel button：Withdraw from the new clock communication box of introduction.

（6）Number button：Enter the corresponding number.

（7）Minute：Enter new time minute display. Before enter a new figure, use '?' to express; When users enter new number value from the figure button, show the digital value that users entered.

（8）Seconds：Enter new time second display. Before enter a new figure, use '?' to express; When users enter new number value from the figure button, show the digital value that users entered.

（9）Hours：Enter new time hour display. Before enter a new figure, use '?' to express; When users enter new number value from the figure button, show the digital value that users entered.
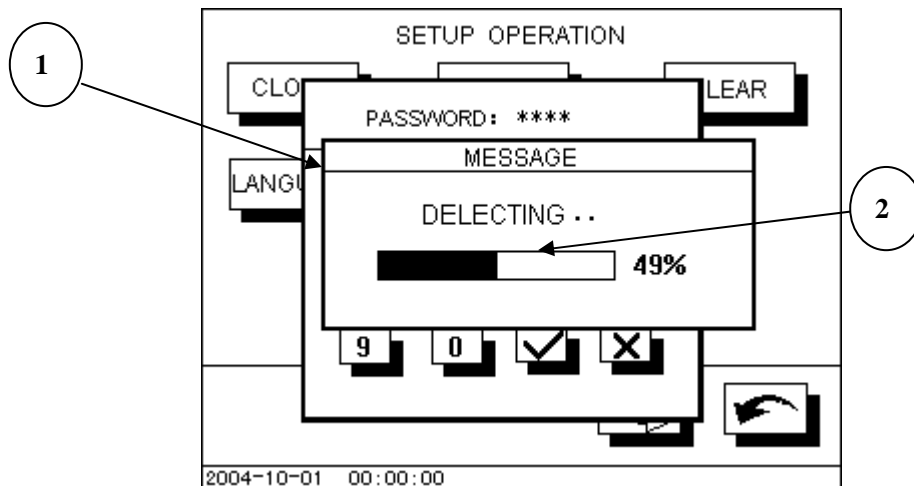

Picture 9

Notice: User set up the system time from left to right, set up order: Year →Month →Date →Hour →Minute →Second, user enter one figure each time, cursor then move one to the right automatically, the corresponding '?' will be entered by user.

13.7.3 Incident records elimination interface.

Press Incident records elimination button and enter the right password, goes into Incident records elimination interface. Will delete all incidents to write down in this interface system, will be irrecoverable after the data are deleted, ask users to use carefully. The interface is as picture10 shows. Every part of meaning in the picture is as follows:

 （1）message box

 （2）Progress mark: Show complication progress of elimination.

Picture 10

13.7.4 Langue interface

Press language button on setting display interface to enter into language choosing interface. You can choose what language to use in the system; it supports two kinds of languages: Chinese and English. The interface is as picture 11 shows. The meaning of each part in the picture is as following:

（1）message box

（2）Chinese：Pressing this button will use the Chinese language to show various kinds of information systematically while showing

（3）English： Pressing this button will use the English language to show various kinds of information systematically while showing
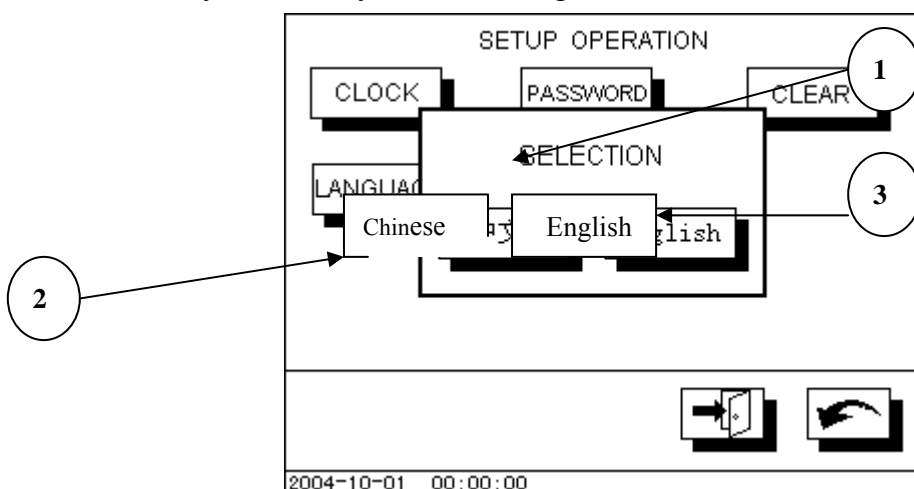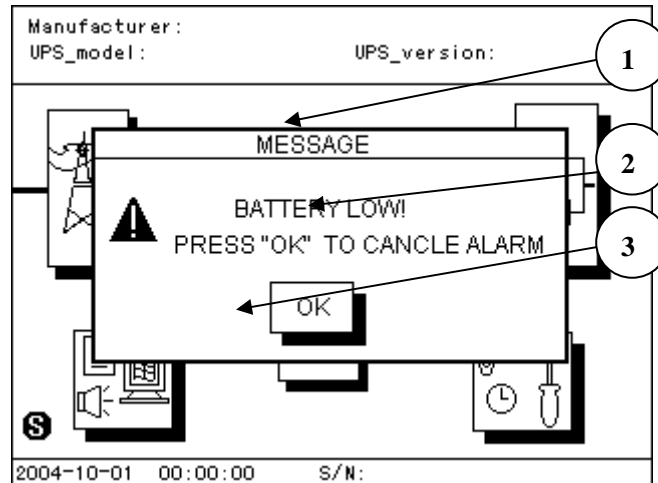

Picture 11

13.8 Alarm interface

When UPS is in warning state, Display module will show the warning interface automatically and preferentially, if UPS warning information is not canceled and the display module will show warning interface until warning information cancelled or user cancel the alarming by hand. The warning interface shows as picture 12.The meaning of each part in the picture is as following:

（1）Warning information frame; Warning information is shown in this news box

（2）Alarm information display

（3）Enter button，press it to cancel UPS alarm, and get out of the warning interface at the same time.

Picture 12

14. Incident code:

System will automatically record some important incidents and date time when incidents happen for checking and managing in the future, system can at most store 256 pieces if incident records. Different incidents have different codes. Users can press system record button to get the incident records. In the form, besides the incident code and time, it will also provide simple incident description. We will provide all incident codes and detailed incident records in the following form one.

Incident code

Incident code	Detail incident description
000	Empty, no records
001	Mains failure
002	Battery low voltage
003	UPS overload
004	Over Temperature
005	Phase sequence abnormal, the UPS input phase sequence is wrong
006	Inverter abnormal，there is something wrong with inverter
007	System abnormal
008	Bypass output, UPS turn to bypass output
009	Inverter output, UPS turn to inverter output
010	Rectifier abnormal, there is something wrong with rectifier
021	Mains returns to normal
022	The voltage of the battery returns to normal。
023	Load returns to normal
024	UPS temperature returns to normal
025	UPS input phase sequence returns to normal
031	Transmit abnormal
032	Transmit return to normal;
041	Automatic shut-down, because battery low voltage or others failure, UPS Automatic shut-down and turn to bypass output.

042	UPS restart
043	UPS is battery testing statue
044	Cancel buzzer alarming by hand
045	Shut down UPS by hand
051	Users send out the order and close the UPS from long-distant monitoring
052	Users send out the order and start the UPS from long-distant monitoring
053	Users send out the order and test the UPS from long-distant monitoring
054	Users send out the order and cancel the buzzer alarming from long-distant monitoring
061	Rectifier start to work
062	Rectifier stop working
Others	Unknown trouble, wrong trouble record

15 Notes:

1 Please press button with facial position of forefinger or middle finger, please do not click the screen with sharp device in order to prevent scratching the touch-sensitive screen surface, influencing the result of showing.

2. After having finished parameter setting, system will remember the amended value inside the machine permanently, which won't be influenced by power availability.

3. If records quantity exceeds the maximum storage quantity, the newest record will cover the oldest record automatically. User can also delete all incident records directly in system.

4. Systematic time adopts making in 24 hours, date adopts the solar calendar.

5. Please correct the system time and eliminate system record when users first use the machine

If users can understand or want to get more detailed help on the content of the manual while using, please contact distributor or consult to our company, we will serve you heartily.